ELECTRIC POWER RESEARCH INSTITUTE

Emergency Management Guidelines Update

Emergency Manual for Plant Operations

2018 TECHNICAL REPORT

Emergency Management Guidelines Update

Emergency Manual for Plant Operations

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ABSTRACT

Severe weather conditions, natural disasters, and human-induced events, such as terrorist attacks, sabotage, or active shooter events all fit under the definition of an emergency that can impact employees, the public, and the company's mission to produce safe and reliable power to its customers. The degree of damage caused by events such as these is often determined by the plant's readiness to respond to particular emergencies and advanced planning to mitigate that damage. Having established emergency management guidelines for the initial response to various emergency events provides confidence that a plant and company are reasonably prepared to manage any realistic threat. This report will provide useful guidance for the initial response by operations to a number of emergency scenarios.

Keywords

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Evacuation
Hurricane

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EXECUTIVE SUMMARY

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PRIMARY AUDIENCE: Power Plant Operators and Operations Managers/Supervisors

SECONDARY AUDIENCE: Emergency Response Organizations and Incident Command Posts

KEY RESEARCH QUESTION

Whereas the *Emergency Management Guideline for Fossil Generating Stations*, 1014199 provides the guidance for establishing the Emergency Planning Program and the Emergency Response Organization, the scope of this guideline is primarily focused on the on-shift operating crew and the initial response to emergency events.

RESEARCH OVERVIEW

The emergency response checklists were derived from the input of several power plant operators and operations leaders from a number of stations in the utility industry. Events, experiences, and implementation of procedures of those involved were evaluated and analyzed to identify the basic actions operators would take in response to various emergencies that could be encountered at a generating station.

KEY FINDINGS

- Having defined actions for specific emergencies and events that could occur in a power plant can mitigate the severity of an event.
- The degree of damage caused by events, such as severe weather, natural disasters, and human-induced events, is often determined by the plant's readiness to respond to particular emergencies and advanced planning to mitigate damage.
- Consolidation of operator actions expected in various emergencies into one manual reduces delay time in responding to an event.

WHY THIS MATTERS

Having established emergency management guidelines for the initial response to various emergency events provides confidence that a plant and company are reasonably prepared to manage any realistic threat. This report will provide useful guidance for the initial response by operations to a number of emergency scenarios. Although physical facilities vary from company to company and location to location, the information presented in this report is intended to provide generating stations with examples of how to structure their own facility emergency response manual or procedure to meet their specific needs.

HOW TO APPLY RESULTS

This guideline, with few exceptions, is primarily focused on the on-shift operating crew and the initial response to emergency events. The initial response is accomplished through the use of checklists.

The checklists are designed to guide the initial responders through the emergency until either the emergency is de-escalated, or in the case of larger scale emergencies, the emergency response organization is activated and operational. The checklists do not encompass every possible emergency scenario but are based on the more common emergencies that could be encountered at a station.

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1
INTRODUCTION

The Federal Emergency Management Agency (FEMA) defines an emergency as "any unplanned event that can cause deaths or significant injuries to employees, customers or the public; or that can shut down your business, disrupt operations, cause physical or environmental damage, or threaten the facility's financial standing or public image."

Severe weather conditions, natural disasters, and human-induced events, such as terrorist attacks, sabotage, or active shooter events all fit under the definition of an emergency that can impact employees, the public, and the company's mission to produce safe and reliable power to its customers. The degree of damage caused by events such as these is often determined by the plant's readiness to respond to particular emergencies and advanced planning done to mitigate damage.

Having established emergency management guidelines for the initial response to various emergency events provides confidence that a plant and company are reasonably prepared to manage any realistic threat. This report will provide useful guidance for the initial response by operations to a number of emergency scenarios. Although physical facilities vary from company to company and location to location, the information presented in this report is intended to provide generating stations with examples of how to structure their own facility emergency response manual or procedure to meet their specific needs. The objectives of having established guidance at a generating station are to ensure responders are effectively prepared to consistently and safely respond in times of emergency to mitigate consequences to employees, the public, and the plant.

2
EMERGENCY RESPONSE ORGANIZATION

In March 2008, based on lessons learned from several natural disasters that impacted generating stations across the industry, EPRI published *Emergency Management Guideline for Fossil Generating Stations*, 1014199. It provides a framework and description of the necessary components of an effective emergency management program. It also provides guidance for the structure of the emergency response organization (ERO) that may be activated at different degrees to assist in response to various emergencies such that operations is able to maintain focus on the plant and equipment.

EROs or incident command positions can be made up of site and/or corporate personnel, with each team member having preassigned roles and responsibilities for such functions as emergency management and operation, personnel accountability, search and rescue, protection of property, damage assessment and control, and follow-up actions to support recovery efforts from certain events. Figure 2-1 shows a typical incident command/ERO.

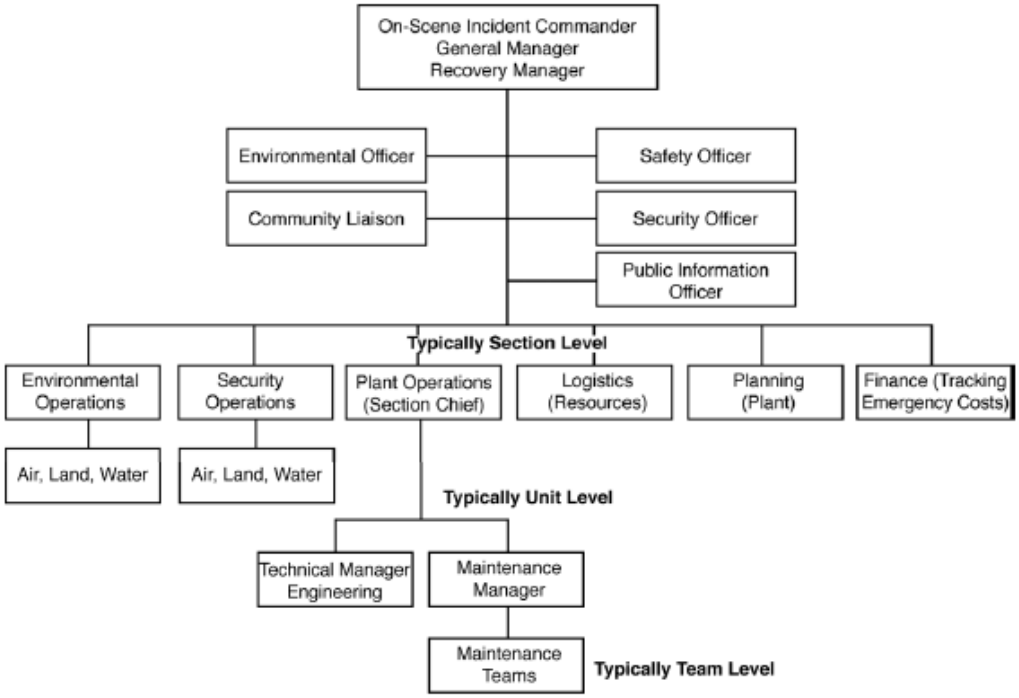

Figure 2-1
Generic Plant Incident Command System Emergency Response Organization

The ERO is not always manned. In an emergency event, it will take time for the organization to activate, staff up, and be operational and ready to assume command responsibilities. As such, aside from predictable events such as hurricanes or possibly flooding, at the moment an emergency or event occurs, the initial defense or first response is provided by the operating shift on duty. Specific on-shift individuals assume emergency roles until they are relieved by designated members of the emergency response team. In some cases, based on a utilities emergency plan, certain on-shift individuals, such as the crew or shift supervisor, may be designated for Incident Command System (ICS) positions and may not need to be relieved.

Whereas the *Emergency Management Guideline for Fossil Generating Stations*, 1014199 provides the guidance for establishing the Emergency Planning Program and the ERO, the scope of this guideline, with few exceptions, is primarily focused on the on-shift operating crew and the initial response to emergency events. This is accomplished through the use of checklists.

The checklists are designed to guide the initial responders through the emergency until either the emergency is de-escalated, or in the case of larger scale emergencies, the ERO is activated and operational. The checklists do not encompass every possible emergency scenario but are based on the more common emergencies that could be encountered at a station.

3
EMERGENCY COMMUNICATIONS

It is of extreme importance that a station or facility be able to notify response organizations internal and external to the station at the onset of an emergency, throughout the event, and on through recovery. Communication systems need to be in place and tested in order for a program to be successful. A system consists not only of the physical equipment but also procedures and checklists for use.

A communication system must be capable of alerting both on-site personnel and off-site agencies. Lessons learned over the years, particularly from hurricanes, pointed out a number of instances involving lack of or failure of communications systems. Some necessary equipment needed during hurricanes included National Oceanographic and Atmospheric Administration (NOAA) weather radio, satellite television, satellite phone with external antenna, emergency power for communication equipment, and on-site wireless capabilities. Loss of communication during an event is a possibility, especially for those involving natural disasters. Alternate means of communication need to be available to ensure appropriate emergency response.

Emergency Communication Services

Wireless Priority Service (WPS) is an emergency phone service managed by the Department of Homeland Security's Office of Emergency Communications. Natural and/or man-made disasters can cause congestion on cellular networks due to increased call volume and/or damage to network facilities. This congestion can affect emergency response capabilities by limiting call completion. WPS provides key groups with priority access and prioritized processing in all nationwide and several regional cellular networks, which greatly increases the probability of call completion. WPS is an easy-to-use, add-on feature subscribed to on a per-cellular-phone basis. WPS calls can be made to other cell phones, landline phones, and satellite phones. The receiving device does not need to have WPS to receive the call.

The Government Emergency Telecommunications Service (GETS) provides a high probability of completion for landline telephone calls during periods of severe network congestion or disruption and when the ability to complete a normal call is hindered. GETS works through a series of enhancements to the landline network. Users receive a GETS calling card to access the service. This card provides access phone numbers, a Personal Identification Number (PIN), and simple dialing instructions.

GETS is accessed through a universal number using common telephone equipment. A series of prompts directs you to enter your 12-digit GETS PIN and destination phone number. Once authenticated, your call receives priority treatment on the landline network.

Public services and utilities are considered critical entities in emergency response and are therefore eligible for this service. More information regarding WPS and GETS, including registration for these services, can be found on the Department of Homeland Security's website (www.dhs.gov/oec).

Communication Information

An Emergency Contacts list or Emergency Directory should be established for easy access to any contact information that could be needed in a given emergency event. These would include contact information for key station and corporate personnel, regulatory agencies, local emergency assistance organization like law enforcement, fire department, and ambulance services. Appendix A provides a template example for typical numbers to include in an emergency telephone directory. This directory should be maintained in the control room, the designated emergency response center, and other key locations determined by station leadership.

Employee Communications

It is important that a means of communication exists for employees to be informed before a predictable event, during an event, and immediately after an event occurs. Pre-event communications, as in the case of a hurricane, can include on-site public address systems, a designated phone number with a recorded message for status and reporting information and company emails or website updates. A system or process should be established to enable employees to provide contact information before leaving the site so they can be individually contacted if necessary.

During the event, employees can stay informed via a designated phone line set up for that purpose, through the use of social media, or in meetings with on-site staff either in person or via audio/video conferencing at predetermined times. Post-event communication with employees is important for the recovery and restart process. Staffed phones and an updated website need to be available to recover employee contact information. Recovery teams should have an emergency telephone directory as well.

4
EMERGENCY MANUAL

It is strongly suggested that stations develop a station- or facility-specific emergency manual to organize the information used in response to various emergencies. Having an emergency manual ensures there is an organized approach to emergency response efforts, establishes roles and responsibilities, and provides the reference materials, such as checklists, in one place for quick and easy use.

Emergency Manual Availability

In addition to electronic copies of the emergency manual, hard copies should be placed in designated locations throughout the plant in the event that computer access is disrupted due to the emergency or event occurring. At a minimum, a hard copy of the emergency manual should be in the following locations:

- Control room
- Shift supervisor's office
- Operations manager's office
- Plant manager's/director's office
- Emergency response center
- Document control

Depending on the facility, site leadership may identify additional locations for placement of the manual so that it is readily available for key personnel such as field operators. Regardless of how many hard copy manuals there are or where they are located, it will be necessary to track these copies to ensure they are kept up-to-date with the current revisions.

Emergency Manual Administration

Stations should designate an individual responsible for the administration of the emergency manual. Procedures, documents, and checklists contained in the manual should be reviewed on at least an annual basis to ensure the manuals are current or to identify any necessary revisions based on plant or personnel changes.

It is beneficial to maintain a log with the document control copy listing all the manuals in use, their locations, and tracking revision changeouts. The individual assigned as the administrator is responsible for maintaining emergency manuals in all designated locations. Original electronic copies should be protected to prevent inadvertent editing or loss.

Emergency Manual Contents

Emergency manuals are to be constructed for ease of use and ready reference. In an emergency or event, operators should be able to quickly find the section of the manual that applies to the event they are experiencing.

The manual should have tabs for each section that clearly label the contents of that section. This allows the user to quickly flip to the needed tab and immediately begin the necessary response to the event. While this guideline contains a number of emergency response checklists, not all events are applicable to all stations nor are the checklists in this guideline all-encompassing. Geography and topography are major factors to consider when determining which sections to include in the site-specific manual. For example, a generating station in Wisconsin is not likely to include a section on responding to a hurricane, whereas a plant in Louisiana or Florida absolutely would.

The following is a recommended organizational structure for an emergency manual (the Appendices in this guideline follow this general order):

- Table of Contents
- Section A Emergency Telephone Contacts/Directory
- Section B Incident Description Form
- Section C Evacuation
- Section D Search and Rescue
- Section E Bomb Threats
- Section F Intruder/Active Shooter
- Section G Explosions
- Section H Sabotage
- Section I Shelter-in-Place
- Section J Hurricane
- Section K Tornado
- Section L Flooding
- Section M Earthquake
- Section N Severe Winter Weather
- Section O Cybersecurity Event

5
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4. *Guideline for an Operations-Focused Organization.* EPRI, Palo Alto, CA: 2011. 1022131.
5. *Operational Experience with Lessons Learned on Hurricanes.* EPRI, Palo Alto, CA: 2007. 1013363.

A
EMERGENCY TELEPHONE DIRECTORY

[Company Name]

[Station Name]

EMERGENCY TELEPHONE DIRECTORY

REGULATORY AGENCIES	
Description	**Phone Number**
National Response Center	
Local US Coast Guard (USCG)	
Occupational Safety and Health Administration (OSHA)	
US Environmental Protection Agency (USEPA)	
[*State*] Dept of Environmental Protection	
[*County*]	
[*Local*]	
[Other – as applicable]	
EMERGENCY ASSISTANCE	
[*Local*] Police/First Aid	
[*Local*] Fire Department	
[*Local*] Ambulance	
[*Local*] Hospital	
[*Local*] HAZMAT	
Federal Bureau of Investigation (FBI)	
FEMA	
[Other – as applicable]	

STATION PERSONNEL	
[*Name*] Plant Manager	Work: [*number*] Cell: [*number*]
[*Name*] Operations Manager	Work: [*number*] Cell: [*number*]
[*Name*] Safety Manager	Work: [*number*] Cell: [*number*]
[*Name*] Environmental Compliance/Program Manager	Work: [*number*] Cell: [*number*]
[*Name*] Operations Supervisor	Work: [*number*] Cell: [*number*]
[*Name*] Operations Supervisor	Work: [*number*] Cell: [*number*]
[Other – as applicable]	Work: [*number*] Cell: [*number*]
	Work: [*number*] Cell: [*number*]
NEIGHBORING COMPANIES	
Utilities Authority	
Transportation Authorities	
Local school districts	
Local industry/companies as appropriate	

[Company Name]

EMERGENCY TELEPHONE DIRECTORY

[Company Name] Corporate Personnel

[*Company Name*] Corporate Contact	**Phone Number**
[*Name*] Security Manager	Work: [*number*] Cell: [*number*]
[*Name*] Director of External Affairs	Work: [*number*] Cell: [*number*]
[*Name*] Sr. Vice President of Operations	Work: [*number*] Cell: [*number*]
[*Name*] Director of Power Generation	Work: [*number*] Cell: [*number*]
[*Name*] Director of Operations	Work: [*number*] Cell: [*number*]
[*Name*] Safety Manager	Work: [*number*] Cell: [*number*]
[*Name*] Director of Corporate Health & Safety	Work: [*number*] Cell: [*number*]
[*Name*] Director of Communications	Work: [*number*] Cell: [*number*]
[*Other personnel as pertinent to emergencies*]	Work: [*number*] Cell: [*number*]

SATELLITE PHONE LOCATIONS/INFORMATION

[Company Name] Location	Satellite Phone Number	Location of Satellite Phone	Contact Person On-Site	Contact Phone Number

B
EMERGENCY EVENT DESCRIPTION FORM

PART I. EVENT SUMMARY

Enter the following information:
Facility name/location:
Date and time event began:
Summary of emergency event:
Current status:
Any injuries or fatalities? Yes ( ) No ( ) Details:
Were evacuations required? Yes ( ) No ( ) Details:
If evacuation is required, are all employees, visitors, contractors accounted for? Yes ( ) No ( ) Details:

PART II. AGENCY NOTIFICATION

Agency	Date/Time Notified	Operator Name/ID	Case/Report Number
Enter relevant questions or comments made by agencies.			

PART III: FULL EVENT DESCRIPTION

Describe incident in detail and in chronological order.
Describe event response activities including list of off-site responders who were notified.

Follow-up, additional information, and any additional comments	
List on-site/off-site consequences (e.g., injuries, evacuations, environmental impact, property damage)	
Print Name	**Signature**

C
EVACUATION CHECKLIST

This Emergency Checklist is to be used as a guide in the event of an **area, partial, or complete evacuation**. If the ERO has not yet been activated, the operations shift supervisor is the incident commander until relieved by the ERO.

Certain conditions (e.g., aerial lift, major fires, explosions, bomb threats, chemical release, severe steam leak, etc.) may occur that necessitate **area, partial, or complete site evacuation** of the station. All possible circumstances cannot be anticipated. However, the following descriptions will serve as guidance for the incident commander to determine the appropriate evacuation level.

Area Evacuation

An Area Evacuation is an evacuation of a certain area in the facility that may contain a hazardous situation. Examples are small chemical release, localized fires, electrical hazard, or ice falling from a rooftop.

Partial Site Evacuation

A Partial Site Evacuation is an evacuation of the entire station except for essential personnel. Examples are fire, bomb threat, or any other situation that requires the evacuation of all employees from the station with the exception of essential personnel. This type of evacuation requires evacuation of all non-essential personnel to a designated on-site assembly area.

Complete Site Evacuation

A Complete Site Evacuation is an evacuation of **all** station personnel. This is done strictly as a last resort when it is unsafe for any personnel to remain in the facility. Examples are structural fires and explosions, catastrophic vapor release, terrorist attacks, states of emergency, or severe weather. This type of evacuation requires evacuation of all personnel from the facility to a designated off-site location.

Date	Initials	Task/Action
INITIAL ASSESSMENT AND ANNOUNCEMENT: Control Room/Incident Commander		
		ASSESS incident and **DETERMINE** what type of evacuation is required: Area Yes ( ) No ( ) Partial Yes ( ) No ( ) Complete Yes ( ) No ( )
FOR AREA EVACUATION:		
		ANNOUNCE to station: *"Attention all personnel! Attention all personnel! Due to (reason for evacuation), all personnel (in specific areas of the facility) must immediately evacuate their work locations and proceed to the (designated assembly area) via (specified route as necessary)."*
		REPEAT announcement: *"Attention all personnel! Attention all personnel! Due to (reason for evacuation), all personnel (in specific areas of the facility) must immediately evacuate their work locations and proceed to the (designated assembly area) via (specified route as necessary)."*
		ENSURE all personnel within localized area have been evacuated and accounted for. • **INITIATE** Search and Rescue (see Appendix D) to locate any missing personnel.
		ISOLATE hazard area, and **CONDUCT** appropriate emergency event response.
		DIRECT essential personnel to continue operation of critical equipment and systems.
FOR PARTIAL SITE EVACUATION:		
		ANNOUNCE to station: *"Attention all personnel! Attention all personnel! Due to (reason for evacuation), all non-essential personnel must immediately evacuate their work locations and proceed to the (designated assembly area) via (specified route as necessary)."*
		REPEAT announcement: *"Attention all personnel! Attention all personnel! Due to (reason for evacuation), all non-essential personnel must immediately evacuate their work locations and proceed to the (designated assembly area) via (specified route as necessary)."*
		ENSURE all non-essential personnel have been evacuated and accounted for. • **INITIATE** Search and Rescue (see Appendix D) to locate any missing personnel.
		CONDUCT appropriate emergency event response.
		NOTIFY outside agencies as appropriate.

FOR COMPLETE SITE EVACUATION:		
		ANNOUNCE to station: *"Attention all personnel! Attention all personnel! Due to (reason for evacuation), ALL personnel must immediately evacuate their work locations and proceed to the (designated off-site assembly area)."*
		REPEAT announcement: *"Attention all personnel! Attention all personnel! Due to (reason for evacuation), ALL personnel must immediately evacuate their work locations and proceed to the (designated off-site assembly area)."*
		DIRECT control room operators to conduct emergency shutdown and evacuate.
		NOTIFY outside agencies as appropriate.

D
SEARCH AND RESCUE CHECKLIST

This Emergency Checklist is to be used as a guide in responding to Search and Rescue activities, resulting from emergency events.

Date	Initials	Task/Action
INITIAL NOTIFICATIONS AND ASSESSMENTS		
		Immediately **CONTACT** control room via *PA system, hand-held radio, or internal phone system*.
		REQUEST dispatch of emergency responders (facility personnel with HAZMAT, fire-fighting, or first aid/EMT training).
		PROVIDE your name, the location, and condition of victim (if known), scene conditions (any known or potential hazards), and any other key information.
		Control Room/Incident Commander will assess scene of rescue (if known) to identify/determine:
		• Existing/potential hazards (e.g., oil/chemical spills, toxic fumes, fires, confined spaces, trip/fall hazards, electrical hazards, etc.)
		• Whether to mobilize the emergency responders to perform a search and rescue and/or contact outside assistance
		• The incident strategies and objectives
		Control Room/Incident Commander will coordinate the following:
		• **CONTACT** emergency assistance (police, fire, ambulance, HAZMAT team).
		• **SUMMON** emergency responders over PA system or radio to rally at a designated area for further instructions.
		• **PERFORM** required agency notifications.
		• **CALL** any other support personnel needed from Emergency Telephone Directory (see Appendix A).
ASSEMBLY OF EMERGENCY RESPONDERS AT RALLY POINT		
		ASSIGN job duties to emergency responders.
		PROVIDE description of rescue scenario (e.g., fire-related rescue, HAZMAT rescue, high-angle rescue, confined-space rescue, etc.)
		PROVIDE overview of associated hazards (e.g., nearby sources of ignition/explosion, oxygen deficiencies, toxic materials, perceptible fumes or heavy smoke, required personal protection equipment [PPE], etc.).

		ESTABLISH incident command post, staging area, and route for responding to incident.
PERFORM SEARCH AND RESCUE ACTIVITIES		
		ESTABLISH staging area with safe distance from hazard area, yet preferably within line of sight.
		ROPE OFF/SECURE perimeter of scene to prevent access of unauthorized personnel.
		If rescue involves fire/smoke/airborne chemical releases, then **APPROACH** from up-wind direction, and set up staging area at safe distance from hazard.
		IDENTIFY appropriate PPE for rescue activities, and **SELECT** emergency responders with appropriate training.
		CONDUCT search and rescue activities using a minimum of two-person teams.
		ESTABLISH a two-person team on standby/backup at all times to assist rescue team if needed.
		When victim located, then: • **OBSERVE** area to ensure it is safe to approach. • Immediately **NOTIFY** Control Room/Incident Commander, and **PROVIDE** status of victim.
		NOTE – *If victim has sustained a fall, back/neck injury, etc., it may be best to provide basic first aid on the scene and await outside assistance, rather than moving the victim.* • **DETERMINE** whether to move victim or await outside assistance.
		• If victim in imminent danger of further injuries/hazards, then carefully **MOVE** victim to safe zone.
		• **PROVIDE** medical treatment/assistance to level of qualifications for which you are trained (e.g., first aid, CPR, EMT training, etc.) until outside assistance arrives.
FOLLOW-UP MEASURES		
		PERFORM follow-up calls to Control Room/Incident Commander to provide status update. Information may include scene conditions, victim's identity, victim's condition (e.g., consciousness, responsiveness, acute injuries, breathing difficulties, discomfort) and status of response effort (e.g., responders on-scene, the need for additional responders, etc.).
		RECORD activities conducted using Emergency Event Description Form (see Appendix B).
		INITIATE an incident investigation, and **NOTIFY** following personnel: Plant Manager, Operations Manager, and Health/Safety Manager.

E
BOMB THREAT CHECKLIST

This Emergency Checklist is to be used as a guide in addressing bomb threats that occur on-site.

Date	Initials	Task/Action
		KEEP caller on line as long as possible, and **RECORD** everything said using attached form (see next page).
		Immediately **MAKE** emergency notifications (see Appendix A, Emergency Telephone Directory) – Control Room/Incident Commander will determine whether a Partial or Complete Site Evacuation is needed (see Appendix C, Evacuation Checklist).
		AVOID standing in front of windows or other potentially hazardous areas.
		Immediately **CONTACT** Police/Fire Dept (see Appendix A, Emergency Telephone Directory). Police/Fire Dept. will assume command and initiate a search, and if necessary, contact the Bomb Squad.
		If any suspicious objects/packages are found, then: • **AVOID** contact. • **CLEAR** area around the object/package. • **WAIT** for Police/Fire Dept assistance.

Instructions: Person receiving the call will complete the checklist to the best of their ability while talking to the caller. If unable to do this, complete applicable sections immediately after the call. Forward the information at once to ranking station management person.

Name of person receiving call _____

Date and time threat received _____

Exact words of caller _____

_____

_____

If the building is occupied, inform the caller that detonation could cause injury or death.

Questions to ask the caller:

1. When is the bomb going to explode? _____
2. Where is the bomb located? _____
3. What does the bomb look like? _____
4. What kind of bomb is it? _____

5. Why was the bomb placed? _____
6. What is your name and/or organization? _____
7. Where are you calling from? _____

Description of caller: Determine to best of your ability

1. Identify	❑ Male ❑ Female ❑ Adult ❑ Juvenile
2. Voice characteristics	❑ Loud ❑ High-pitched ❑ Raspy ❑ Soft ❑ Deep ❑ Intoxicated ❑ Pleasant ❑ Other
3. Speech	❑ Distinct ❑ Stutter ❑ Slurred ❑ Slow ❑ Distorted ❑ Fast ❑ Other
4. Language	❑ Excellent ❑ Good ❑ Fair ❑ Foul
5. Accent	❑ Local ❑ Other
6. Manner	❑ Angry ❑ Calm ❑ Rational ❑ Irrational ❑ Coherent ❑ Incoherent ❑ Deliberate ❑ Emotional ❑ Righteous ❑ Laughing ❑ Other

Background noises noted: _____

_____

_____

Additional information: _____

_____

_____

F
RESPONSE TO INTRUDERS CHECKLIST

This Response to Intruders Checklist is to be used as a guide in addressing unauthorized entry by intruders.

Date	Initials	Task/Action
		Immediately **NOTIFY** Control Room of intruder via PA system, hand-held radio, or phone.
		PROVIDE as much detail as possible regarding intruder: • A physical description of the intruder(s), including the type of intruder (media personnel, public interest group, prior employee, random vagrant, possible terrorist, etc.) • The current location of the intruder(s) and the point/location of unauthorized access (if known) • The actions or perceived intentions of the intruders (e.g., peaceful, violent, vandalizing equipment, theft of equipment, issuing threats/demands) • Whether the intruder(s) caused any injuries to themselves or surrounding personnel during access to the site
		NOTIFY Security (if site has Security).
		NOTIFY Police/Fire/Emergency Services or any other outside responders as applicable.
		NOTIFY site management to begin making other necessary corporate notifications.
		If possible, from a safe distance, then **ASSESS** intruder's intentions, and **RECORD** as many details about their description and whereabouts as you can.
		DETERMINE if intruder has caused any harm to facility or personnel, and **TAKE** appropriate actions.
		AVOID contact with intruder, **AWAIT** assistance from local police department, and do not attempt to detain intruders (if they are still on-site).
		If any vandalism or sabotage is encountered, then **REFER** to Appendix H, Acts of Sabotage.

G
RESPONSE TO EXPLOSIONS CHECKLIST

This Emergency Checklist is to be used as a guide in addressing Explosions that have occurred on-site.

Date	Initials	Task/Action
		Immediately **NOTIFY** Local Police/Fire/HAZMAT/Ambulance.
		DETERMINE if Area, Partial, or Complete Site Evacuation is required (see Appendix C, Evacuation Checklist).
		PROVIDE first aid/medical attention to any victims until help arrives.
		IMPLEMENT search and rescue activities as needed (see Appendix D, Search and Rescue*).*
		If trapped within compromised area, then:
		• **DON** any available and appropriate PPE, including hard hat, safety glasses, respirators, self-contained breathing apparatuses (SCBAs), chemical resistant suits, gloves, etc.
		• If items are falling off shelves or from ceiling, **STAY** clear of unstable structures. **TAKE** shelter under a sturdy table or desk, if necessary.
		• **REMAIN** low to floor, and **EXIT** building as quickly as possible.
		• **COVER** nose and mouth with handkerchief, clothing, or wet cloth.
		• When approaching a closed door, **USE** back of hand to feel lower, middle, and upper parts of door. – If door is at normal temperature, **OPEN** it slowly. – If door is hot, then **LEAVE** door closed, and **SEEK** an alternate escape route.
		• **STAY** below smoke at all times. Heavy smoke and poisonous gasses typically collect along ceiling.
		STAND clear of compromised area(s).

		NOTE – *Always call appropriate authorities for assistance (*see Appendix A, Emergency Telephone Directory*). Do not attempt to implement corrective actions unless appropriately trained and authorized.* **ASSESS** facility hazards, and survey facility for damage. • If re-entry to area/facility is authorized by site management or Incident Commander, then SURVEY for safety hazards/damage, and TAKE corrective action, if possible.
		• Any exposed or dangling wires/gas leaks/sewage, or water line damage?
		• Any equipment or storage tank/container damage and/or leaks (potentially hazardous substance)?
		• Survey facility for damage. Take pictures of internal and external damage, and call the appropriate in-house and outside contractors to repair or correct damage.

H
ACTS OF SABOTAGE CHECKLIST

This Emergency Checklist is to be used as a guide in addressing Acts of Sabotage by intruders, disgruntled employees, or other unauthorized personnel.

Date	Initials	Task/Action
		Immediately **NOTIFY** control room via PA system, hand-held radio, or phone to inform them of incident (provide your name, your location, and phone number for follow-up discussions).
		PROVIDE as much detail as possible regarding incident and saboteur:
		• A description of sabotage event (e.g., fire, explosion, physical attack, equipment damage, etc.)
		• Location, type, and extent of damage caused by sabotage (e.g., personnel injury, potential health and safety hazards, environmental damage, related/affected equipment, and any other key information)
		NOTE: *Do not attempt to detain the saboteur(s) (if they are still on-site) but rather maintain a safe distance, and record as many details about their description and whereabouts as possible (e.g., photographs, notes, etc.).* • A physical description of saboteur(s), if known
		• Current location of saboteur(s), if known
		SOUND appropriate alarm (if applicable), and **PERFORM** announcements over PA system for all facility and non-facility personnel to remain clear of area.
		NOTIFY Police/Fire/Emergency Services or any other outside responders, as applicable (see Appendix A, Emergency Telephone Directory).
		NOTIFY site management to begin making other necessary corporate notifications.
		ASSESS hazards associated with sabotage, and **DETERMINE** if any evacuation is required (see Appendix C, Evacuation Checklist).
		ASSESS need for any outside assistance, and **COORDINATE** through Incident Commander.
		PROVIDE medical assistance to injured personnel, within qualifications of training (first aid, AED, CPR, etc.).
		CONDUCT Search and Rescue, if applicable (see Appendix D, Search and Rescue).
		ADDRESS any damage associated with event (clean-ups, booming, etc.).
		ISOLATE, **SECURE,** and **BARRICADE** scene of event to prevent access from unauthorized personnel.

		TREAT scene of sabotage event as a crime scene, and **AVOID** disturbing potential evidence.
		FACILITATE access by police and other investigative authorities.
		TAKE pictures of internal and external damage.
		When re-entry to scene is authorized, then **SURVEY** area, and **PERFORM** a complete safety hazard assessment, including:
		• Any exposed or dangling wires/electrical hazards, gas leaks, sewage/wastewater leaks?
		• Any equipment/storage tank damage, oil/chemical leaks, or other potentially hazardous substances?
		• Any slip, trip, or fall hazards; ignition sources; confined space; or other hazards?

I
SHELTER-IN-PLACE CHECKLIST

This Emergency Checklist is to be used as a guide when a Shelter-In-Place condition has been declared. A Shelter-In-Place condition is usually declared when there has been a security incident, a severe weather emergency (tornado), or when hazardous substance (chemical, biological, or radiological) has been released into the atmosphere.

Date	Initials	Task/Action
		ANNOUNCE to station: *"Attention all personnel, Attention all personnel! A Shelter-In-Place condition has been declared. All personnel are requested to report immediately to the (identify the designated locations)."*
		REPEAT announcement: *"Attention all personnel, Attention all personnel! A Shelter-In-Place condition has been declared. All personnel are requested to report immediately to the (identify the designated locations)."*
		INSTRUCT personnel to remain inside to lessen risk of exposure to hazard.
		SHUT OFF HVAC systems (that draw in air from outside) and **SEAL** and **BLOCK** airways.
		SHUT/LOCK/COVER windows and vents with plastic sheeting and duct tape.
		MAINTAIN an entrance for gathering personnel, but **ENSURE** door is immediately closed behind them. • As personnel enter, **ENSURE** first aid is administered as necessary.
		For explosion protection, **CLOSE** window shades, blinds, or curtains to help decrease amount of glass that could potentially injure personnel.
		PREPARE an accountability list – **RECORD** name and facility affiliation (employee, visitor, or customer) of each person upon entry.
		After accountability, **LOCK** doors (locking makes a better seal), and **SEAL** cracks around the door with plastic sheeting and duct tape
		TURN on a radio or television to a local station that broadcasts emergency information. • **STAY** tuned in until the "All Clear" message is broadcast from Emergency Broadcast System, and then **REFER** to Post Shelter-In-Place Condition list at end of this page.
		NOTIFY Control Room/Incident Commander to provide accountability list.
		BE prepared to evacuate if need arises (see Appendix C, Evacuation Checklist).

		Post Shelter-In-Place Condition: When local authorities or Incident Command has deemed it is safe to go outside, then you will hear the “All Clear” message over the Emergency Broadcast System, facility PA system, or radio.
		• Control Room/Incident Commander will announce: *“Attention all personnel (repeat twice)! An “All Clear” Condition has been declared, all personnel may now proceed outdoors.”*
		• Follow additional instructions from Control Room/Incident Commander.

J
HURRICANE RESPONSE CHECKLIST

This Emergency Checklist is to be used as a guide in the event of a Hurricane Watch, Warning or Condition.

Date	Initials	Task/Action
HURRICANE WATCH – When there is a threat of hurricane conditions within 24–36 hours.		
		Closely **MONITOR** radio, television, and local websites for official instructions/information.
		CHECK inventory of emergency/disaster supplies, and replace as necessary.
		INFORM personnel of pertinent information such as hurricane classification, facility status, potential safe areas or primary assembly areas, potential evacuation routes and off-site shelters, and pre-planning action items.
		CONSIDER release of non-essential personnel. Additional essential plant personnel may be called if necessary.
		PRE-PLAN for possible emergency scenarios and facility shutdown.
		FILL fuel tanks of company vehicles. **PARK** vehicles indoors or at higher elevations on-site, wherever possible.
		ANCHOR or **RELOCATE** everything on-site that could potentially blow away or float away or cause damage/injury.
		• **INSPECT** roofs and elevated areas. • **BOARD/SECURE** panels and equipment. • **VERIFY** gutters are clear, and **REMOVE** outside antennas.
		CLOSE/BOARD all windows and roof hatches. **CLOSE** all doors.
		TURN refrigerators and freezers to coldest settings. Open only when absolutely necessary, and close quickly.
		STORE drinking water in clean jugs and bottles.
		REVIEW Evacuation Plan (see Appendix C, Evacuation Checklist).
HURRICANE WARNING – When there is a threat of hurricane conditions within 24 hours or less.		
		General Procedures
		ENSURE Control Room/Incident Commander monitors radio, television, and local websites for official instructions/information.
		PREPARE for possible emergency scenarios and facility shutdown.

		VERIFY petty cash is on hand for post-hurricane needs.
		TOP off potable, demineralized water supply.
		PREPARE all facility operating equipment, and **REPLENISH** any operational-related supplies.
		AVOID elevators and stay inside, away from windows, skylights, and glass doors.
		KEEP a supply of flashlights and extra batteries handy. **AVOID** potentially combustible sources of light (e.g., open flames, such as candles and kerosene lamps).
		If an Off-Site Evacuation is mandated by Company Management or Local Officials:
		• **IMPLEMENT** Appendix C, Evacuation Checklist for a Complete Site Evacuation.
		• **CONDUCT** accountability, and **EVACUATE** all non-essential personnel to nearest off-site shelter (determine safest route for evacuation).
		• **NOTIFY** off-site emergency contact (see Appendix A, Emergency Telephone Directory) with names of personnel being evacuated from premises, as well as essential personnel remaining on-site for emergency shutdown.
		• **PERFORM** emergency equipment shutdown, **SECURE** all utilities (e.g., water main, gas valves, etc.), and **EVACUATE** premises.
HURRICANE CONDITIONS – Winds of 74 miles per hour or greater or dangerously high water and seas.		
		All on-site personnel should remain in a designated assembly area. **MONITOR** battery-operated radio or television for official instructions.
		GIVE first aid where appropriate.
		MAINTAIN communications with local authorities.
		PREPARE for possible emergency scenarios.
POST-HURRICANE CONDITIONS – When hurricane conditions have subsided and when officials deem it is safe to go outdoors.		
		MONITOR battery-operated radio, television, or internet for official instructions.
		REVIEW accountability list. • **IDENTIFY** potentially missing personnel. • **LOCATE** missing or trapped personnel (see Appendix D, Search and Rescue).
		GIVE first aid where appropriate.
		NOTE – *Do not attempt to implement corrective actions unless appropriately trained and authorized***.** **CALL** appropriate authorities for assistance (see Appendix A, Emergency Telephone Directory).

		SURVEY facility to assess safety hazards/damage, and **TAKE** corrective action, if possible:
		• Exposed/dangling electrical wires
		• Gas leaks
		• Sewage or water line damage
		• Damaged oil/chemical storage tanks, piping, equipment, containers (potentially hazardous substances)
		• Take pictures of internal and external damage, and call the appropriate in-house and outside contractors to repair or correct damage.
		CLEAN roof drains, and **REMOVE** heavy accumulated debris from roof to prevent drainage problems or damage to the roof.
		CALL on-site personnel and contractors to correct/repair the damage.
		When deemed safe, then **RESTORE** gas and water services.
		RETRIEVE office equipment and valuables stored at a higher elevation.
		NOTIFY off-site personnel when it is safe to return to work.
		NOTIFY off-site emergency contact of employee status/location changes.
		LIMIT telephone use to emergency-only calls (due to system overloads).

K
TORNADO RESPONSE CHECKLIST

This Emergency Checklist is to be used as a guide in the event of a Tornado Watch or Warning.

Date	Initials	Task/Action
TORNADO PREPARATION		
		Closely **MONITOR** the radio, television, and local websites for official instructions/information. NOAA Weather radio should be monitored for critical information from the National Weather Service (NWS).
		CHECK inventory of emergency/disaster supplies, and **REPLACE** as necessary.
		INFORM personnel of pertinent information such as tornado status (watch or warning). **REVIEW** assembly areas, evacuation routes and off-site shelters, and pre-planning action items.
		CONSIDER release of non-essential personnel. Additional essential plant personnel may be called if necessary.
		PRE-PLAN for a possible emergency scenario and facility shutdown.
		FILL the fuel tanks of company vehicles. • **PARK** them inside a sturdy structure or at lower elevations on-site.
		ANCHOR or **RELOCATE** everything on-site that could become a hazard (e.g., projectile) in a tornado.
		• **INSPECT** roofs and elevated areas. • **BOARD/SECURE** panels and equipment. • **VERIFY** gutters are clear. • **REMOVE** outside antennas.
		CLOSE/BOARD all windows and roof hatches. **CLOSE** all doors.
		TURN refrigerators and freezers to coldest settings. Open only when absolutely necessary, and close quickly.
		STORE drinking water in clean jugs and bottles.
		REVIEW Evacuation Plan (see Appendix C, Evacuation Checklist).

DURING A TORNADO – Seek shelter immediately!		
		DIRECT all personnel to seek shelter on **lowest floor possible** (usually basement).
		AVOID areas with equipment or other items that could become hazards if impacted by extreme winds.
		If possible, **AVOID** areas where items and equipment stored on floor above shelter location may become hazards in the case of structural damage.
		CROUCH facedown on floor, with your hands over your head, until tornado has passed.
		If an Off-Site Evacuation is mandated by Company Management or Local Officials:
		• **IMPLEMENT** Evacuation Plan (see Appendix C, Evacuation Checklist).
		• **CONDUCT** accountability and evacuate all non-essential personnel to nearest off-site shelter (determine safest route for evacuation).
		• **NOTIFY** off-site emergency contact (see Appendix A, Emergency Telephone Directory) with names of personnel being evacuated from the premises, as well as the essential personnel remaining on-site for the emergency shutdown.
		• **PERFORM** emergency equipment shutdown, **SECURE** all utilities (e.g., water main, gas valves, etc.), and **EVACUATE** premises.
POST-TORNADO CONDITIONS – When tornado conditions have subsided and when officials deem it is safe to go outdoors.		
		MONITOR battery-powered radio or television for official instructions.
		REVIEW accountability list. • **IDENTIFY** potentially missing personnel. • **LOCATE** missing or trapped personnel (see Appendix D, Search and Rescue).
		GIVE first aid where appropriate.
		NOTE – *Do not attempt to implement corrective actions unless you are appropriately trained and authorized*. **CALL** appropriate authorities for assistance (see Appendix A, Emergency Telephone Directory).
		SURVEY facility to assess safety hazards/damage, and **TAKE** corrective action, if possible:
		• Exposed/dangling electrical wires
		• Gas leaks
		• Sewage or water line damage

		• Damaged oil/chemical storage tanks, piping, equipment, containers (potentially hazardous substances)
		• Take pictures of internal and external damage, and call the appropriate in-house and outside contractors to repair or correct damage.
		CLEAN roof drains, and **REMOVE** debris from roof to prevent drainage problems or damage to roof.
		CALL on-site personnel and contractors to correct/repair the damage.
		When deemed safe, **RESTORE** gas and water services.
		RETRIEVE office equipment and valuables.
		When it is safe to return to work, then **NOTIFY** off-site personnel.
		NOTIFY off-site emergency contact of employee status/location changes (see Appendix A, Emergency Telephone Directory).
		LIMIT telephone use to emergency-only calls (due to system overloads).

L
FLOODING RESPONSE CHECKLIST

This Emergency Checklist is to be used as a guide in the event of a Flood Watch, Warning or Condition.

Date	Initials	Task/Action
FLOOD PREPARATION		
		Closely **MONITOR** radio, television, and local websites for official instructions/information. NOAA Weather radio should be monitored for critical information from the NWS.
		CHECK inventory of emergency/disaster supplies, and replace as necessary.
		INFORM personnel of pertinent information such as potential flooding. **REVIEW** assembly areas, evacuation routes and off-site shelters, and pre-planning action items.
		CONSIDER release of non-essential personnel and addition of essential plant operators.
		PRE-PLAN for possible emergency scenarios and facility shutdown.
		• **FILL** fuel tanks of company vehicles. • **PARK** vehicles indoors at higher elevations on-site. • **CONSIDER** parking inside secondary containments, if accessible.
		ANCHOR/SECURE/RELOCATE everything on-site that could potentially be impacted by floodwaters.
		• **INSPECT** roofs and elevated areas. • **BOARD/SECURE** panels and equipment. • **VERIFY** gutters are clear. • **REMOVE** outside antennas.
		CLOSE/BOARD all windows and roof hatches. Close all doors.
		TURN refrigerators and freezers to coldest settings. Open only when absolutely necessary, and close quickly.
		STORE drinking water in clean jugs and bottles.
		STORE facility documents and valuables in waterproof containers at highest elevation of facility (to avoid loss due to flood damage).
		REVIEW Evacuation Plan (see Appendix C, Evacuation Checklist).

FLOOD CONDITIONS EXIST – When flooding is occurring – Seek high ground!		
		All personnel should remain indoors except for emergency measures.
		SEEK shelter/high ground. **AVOID** contact with floodwaters, which may be contaminated by pathogens/chemicals.
		STAY clear of areas where equipment may be energized.
		NEVER attempt to traverse flooded roadways or areas. People and vehicles can be swept downstream by unseen currents.
		If an Off-Site Evacuation is mandated by Company Management or Local Officials:
		• **IMPLEMENT** Evacuation Plan (see Appendix C, Evacuation Checklist).
		• **CONDUCT** accountability, and **EVACUATE** all non-essential personnel to nearest off-site shelter (determine safest route for evacuation).
		• **NOTIFY** off-site emergency contact (see Appendix A, Emergency Telephone Directory) with names of personnel being evacuated from premises, as well as essential personnel remaining on-site for emergency shutdown.
		• **PERFORM** emergency equipment shutdown, **SECURE** all utilities (e.g., water main, gas valves, etc.), and **EVACUATE** the premises.
POST-FLOOD CONDITIONS – When flooding conditions have subsided and when officials deem it is safe to go outdoors.		
		MONITOR battery-powered radio, television, or internet for official instructions.
		REVIEW accountability list. **IDENTIFY** potentially missing personnel, and **LOCATE** missing or trapped personnel (see Appendix D, Search and Rescue).
		GIVE first aid where appropriate.
		NOTE – *Do not attempt to implement corrective actions unless you are appropriately trained and authorized*. **CALL** appropriate authorities for assistance (see Appendix A, Emergency Telephone Directory).
		SURVEY facility to assess safety hazards/damage, and **TAKE** corrective action, if possible:
		• Exposed/dangling electrical wires
		• Gas leaks
		• Sewage or water line damage
		• Damaged oil/chemical storage tanks, piping, equipment, containers (potentially hazardous substances).
		• Take pictures of internal and external damage (for insurance claims), and call the appropriate in-house and outside contractors to repair or correct damage.

		CLEAN roof drains, and **REMOVE** debris from roof to prevent drainage problems or damage to roof.
		CALL on-site personnel and contractors to correct/repair the damage.
		When deemed safe, then **RESTORE** gas and water services.
		RETRIEVE office equipment and valuables stored at a higher elevation.
		When safe to return to work, **NOTIFY** off-site personnel.
		NOTIFY off-site emergency contact of employee status/location changes (see Appendix A, Emergency Telephone Directory).
		LIMIT telephone use to emergency-only calls (due to system overloads).

M
EARTHQUAKE RESPONSE CHECKLIST

This Emergency Checklist is to be used as a guide in the event of an Earthquake.

Date	Initials	Task/Action
EARTHQUAKE PREPARATION – There is typically no advanced warning of an earthquake occurrence; however, these precautions may be ongoing activities.		
		Closely **MONITOR** radio, television, and local websites for official instructions/information.
		CHECK inventory of emergency/disaster supplies, and **REPLACE** as necessary.
		INFORM personnel of pertinent information such as earthquake hazard potential, facility status, potential safe areas or primary assembly areas, potential evacuation routes, off-site shelters, and pre-planning action items.
		CONSIDER release of non-essential personnel and addition of essential plant operators.
		PRE-PLAN for possible emergency scenarios and facility shutdown.
		FILL fuel tanks of company vehicles. **PARK** them away from potential falling or shifting items.
		ANCHOR or **SECURE** everything on-site that could become projectiles or cause damage when shifting during vibrations (e.g., yard debris, 55-gallon drums, non-essential yard equipment, portable buildings, trailers, dumpsters, outdoor signs, etc.)
		INSPECT integrity of roofs, buildings, foundations, and containments. Any structural damage should be repaired/addressed immediately when it is safe to do so.
		KEEP windows and doors closed.
		TURN refrigerators and freezers to coldest settings. Open only when absolutely necessary, and close quickly.
		STORE drinking water in clean jugs and bottles.
		STORE facility documents and valuables in secure areas. **BACK UP** electronic files/servers regularly.
		REVIEW Evacuation Plan (see Appendix C, Evacuation Checklist).

DURING AN EARTHQUAKE		
		If you are inside during an active earthquake, then **DROP**, **COVER** and **HOLD ON**. **PROTECT** yourself from shifting and moving furniture, equipment, etc.
		If you are outdoors when an earthquake occurs, then **MOVE** to a clear area (no buildings, trees, or objects that can shift or fall on you) if it is safe to do so.
		If an Off-Site Evacuation is mandated by Company Management or Local Officials:
		• **IMPLEMENT** Evacuation Plan (see Appendix C, Evacuation Checklist).
		• After muster, **DIRECT** non-essential personnel to nearest shelter, and provide them with safest route.
		• **NOTIFY** off-site emergency contact (see Appendix A, Emergency Telephone Directory) with names of employees remaining on-site, and those employees going to a shelter and shelter location.
		• **PERFORM** emergency equipment shutdown.
		• **SECURE** facility utilities (e.g., turn off water main/gas valves, etc.), and **EVACUATE** premises.
POST-EARTHQUAKE CONDITIONS – When earthquake conditions have subsided and when officials deem it is safe to go outdoors.		
		ENSURE that personnel monitor battery-powered radio or television for official instructions.
		REVIEW the accountability list. **IDENTIFY** potentially missing personnel. **LOCATE** missing or trapped personnel (see Appendix D, Search and Rescue).
		GIVE first aid where appropriate.
		NOTE – *Do not attempt to implement corrective actions unless you are appropriately trained and authorized.* **CALL** appropriate authorities for assistance (see Appendix A, Emergency Telephone Directory).
		Survey facility to assess safety hazards/damage, and **TAKE** corrective action, if possible:
		• Exposed/dangling electrical wires
		• Gas leaks
		• Sewage or water line damage
		• Miscellaneous equipment or storage container damage and leaks (potentially hazardous substances)
		• Take pictures of internal and external damage, and call the appropriate in-house and outside contractors to repair or correct damage.

		CALL on-site personnel and contractors to correct/repair damage.
		When deemed safe, then **RESTORE** gas and water services.
		When safe to return to work, **NOTIFY** off-site personnel.
		NOTIFY off-site emergency contact of employee status/location changes (see Appendix A, Emergency Telephone Directory).
		LIMIT telephone use to emergency-only calls (due to system overloads).

N
SEVERE WINTER WEATHER CHECKLIST

This Emergency Checklist is to be used as a guide in the event of Severe Winter Weather (Watch, Warning or Condition).

Date	Initials	Task/Action
SEVERE WINTER WEATHER PREPARATION		
		Closely **MONITOR** radio, television, and local websites for official instructions/information. NOAA Weather radio should be monitored for critical information from the NWS.
		CHECK inventory of winter weather supplies, and **REPLACE** as necessary.
		INFORM facility personnel of pertinent information such as potential snow/ice fall locations, icy walkways/slip hazards, etc. **REVIEW** assembly areas, evacuation routes, off-site shelters, and pre-planning action items.
		CONSIDER release of non-essential personnel and addition of essential plant operators.
		PRE-PLAN for possible emergency scenarios and facility shutdown.
		FILL fuel tanks of company vehicles. **PARK** vehicles indoors or at higher elevations on-site, wherever possible.
		RELOCATE everything on-site that could be potentially impacted by heavy accumulations of snow or ice.
		INSPECT roofs and elevated areas. **VERIFY** gutters are clear. **REMOVE** outside antennas.
		CLOSE/BOARD all windows and roof hatches. **CLOSE** all doors. **SEAL** all wall penetrations.
		VERIFY that freeze protection is in service. **INSTALL** temporary windbreaks and portable heaters at defined locations.
		STORE drinking water in clean jugs and bottles.
		REVIEW Evacuation Plan (see Appendix C, Evacuation Checklist).

SEVERE WINTER WEATHER CONDITIONS EXIST – Blizzard, state of emergency, etc.		
		REMAIN indoors except for emergency measures.
		WEAR appropriate clothing, and **MAINTAIN** contact with the supervisor at regular, agreed-to intervals.
		MONITOR for frostbite and hypothermia due to severe weather conditions. Be aware that work stress increases when tasks are performed under adverse conditions.
		If an Off-Site Evacuation is mandated by Company Management or Local Officials:
		• **IMPLEMENT** Evacuation Plan (see Appendix C, Evacuation Checklist).
		• **CONDUCT** roll call, and **EVACUATE** all non-essential personnel to nearest off-site shelter (determine safest route for evacuation).
		• **NOTIFY** off-site emergency contact (see Appendix A, Emergency Telephone Directory) with names of personnel being evacuated from premises, as well as essential personnel remaining on-site for emergency shutdown.
		• **PERFORM** emergency equipment shutdown. • **SECURE** all utilities (e.g., water main, gas valves, etc.). • **EVACUATE** premises.
POST-SEVERE WEATHER CONDITIONS – **When severe conditions have subsided and when officials deem it is safe to go outdoors.**		
		MONITOR battery-powered radio, television and/or internet for official instructions.
		REVIEW accountability list. Identify potentially missing personnel, and **LOCATE** missing or trapped personnel (see Appendix D, Search and Rescue).
		GIVE first aid where appropriate.
		NOTE – **Do not attempt to implement corrective actions unless** *you are appropriately trained and authorized.* **CALL** appropriate authorities for assistance (see Appendix A, Emergency Telephone Directory).
		SURVEY facility to assess safety hazards/damage, and **TAKE** corrective action, if possible:
		• Exposed/dangling electrical wires
		• Gas leaks
		• Sewage or water line damage
		• Damaged oil/chemical storage tanks, piping, equipment, containers (potentially hazardous substances)
		• Take pictures of internal and external damage (for insurance claims), and call the appropriate in-house and outside contractors to repair or correct damage.

		CLEAN roof drains, and **REMOVE** heavy accumulated snow and/or ice from roof to prevent drainage problems or damage to roof.
		CALL on-site personnel and contractors to correct/repair the damage.
		When deemed safe, then **RESTORE** gas and water services.
		RETRIEVE office equipment and valuables stored at a higher elevation.
		When it is safe to return to work, then **NOTIFY** off-site personnel.
		NOTIFY off-site emergency contact of employee status/location changes (see Appendix A, Emergency Telephone Directory).
		LIMIT telephone use to emergency-only calls (due to system overloads).

O
CYBERSECURITY EVENT RESPONSE

Cybersecurity Incident Response is a vital component of an organization's overall cybersecurity plan to protect computer systems, networks, programs, and data from unauthorized access, theft, or intentional damage or attacks. With an increasing reliance on computers to control many functions in the power-generation industry, there is a need to prevent, detect, analyze, and respond to cybersecurity attacks. A breech in cybersecurity could result in the loss of power in a large area for a long period of time with the potential for consequences as severe as a natural disaster. Although the internet is a potential attack route, experience shows equipment controlled by computers that are not connected to the network can also be vulnerable.

With the growing incidents of cyberattacks across the globe, it is imperative that utilities prepare for cybersecurity incidents and plan for effective incident response. As with other industries, power-generation facilities are becoming targets for cyber threat actors. Incident response is an important component of an organization's overall cybersecurity program. An effective incident response plan defines the ways an organization prepares to withstand potentially disruptive information system events and the incidents that may arise from malicious attackers or random malware. It is essential for power-generation plant managers and incident response teams to understand the potential cybersecurity risks facing their plants; the resources that may be needed to deploy, detect, and respond to cybersecurity incidents; and the tools or improvements to their facilities that may enhance their incident-response times.

Utilities must acknowledge the fact that their networks may have some exposure and that certain plant components are possible targets for malicious activity. In anticipation of a likely cyberattack, many utilities have developed strong incident-response programs that include detection and response strategies, specific plans for likely scenarios, and a robust training program. Preparation is important to develop plans and processes that can minimize the overall impact and duration of a cybersecurity event or incident.

Anticipation and preparation are important components of a program's plans and processes to minimize the impact and duration of a cybersecurity incident. The elements of an effective response program are to assure that the proper team members, detection and response strategies, processes, tools, and technology are at the ready to manage an incident with certainty and efficiency. Such a program includes:

- Development of a threat profile for the facility
- Accurate detection of an anomaly or a potential cyber attack
- Appropriate incident-response drills and exercises
- Detection of possible vulnerabilities in existing systems so that overall impact can be evaluated

- Incident-specific evaluation
- Restriction and eradication techniques
- Recovery and post-incident review

Guidance and strategies that utility managers can use to efficiently detect, respond to, and recover from cybersecurity incidents in power-generation environments can be found in EPRI 10007977, *Cyber Security Incident Response in Power Generation Guideline*, July 2018. This report includes a brief discussion of each topic and a corresponding checklist for useable tools. This report also includes several appendices that can be referenced to aid the speed of incident-response efforts for a variety of specific failure scenarios that may impact power-generation utilities. A thorough description of each failure scenario is provided that includes vulnerabilities, impact, indicators, detection, analysis/forensics, prioritization, containment/eradication, recovery, and potential mitigations. The report also contains incident-response playbooks that offer step-by-step task lists of actions to help create, escalate, close out, or analyze an incident, or quarantine a specific type of malware or incident. Playbooks are available for the most likely found events, which include:

- Ransomware/data wiper events
- Malicious commands events
- Unauthorized human-machine interface (HMI) access events
- USB device events

The following checklist is to be used as a guide for Operations in addressing Cybersecurity Incidents, the detection of an anomaly or cyber incident that has occurred by observation, automated means, or through other reporting mechanisms.

Date	Initials	Task/Action
Upon initial report of possible or actual cyber incident, Shift Supervisor and/or Operations personnel perform the following:		
		OBTAIN as much information from incident reporter as possible, and **RECORD** information on appropriate form.
		If practical, **REQUEST** incident reporter(s) wait for cybersecurity to arrive at location.
		ENSURE a report or notification is initiated (should be performed by the incident reporter).
		If reported condition is an immediate security concern, then **NOTIFY** Control Room/Incident Commander of condition, and **COORDINATE** resolution of issue.
		INITIATE investigation or troubleshooting to determine whether anomaly was a maintenance issue or potential result of intentional act(s).
		If investigation or troubleshooting indicates anomaly is equipment failure or a maintenance issue, then **INITIATE** maintenance and **UPDATE** incident notification to identify maintenance resolution.

		MAINTAIN a roster with contact information for duty Cyber Security Incident Response Team (CSIRT) lead and CSIRT members to support cyber incident response.
		Members of Operations staff may be identified as members of CSIRT, as needed, depending on incident.
		If investigation or troubleshooting indicates anomaly was a result of suspected or actual intentional act(s), or cause cannot be immediately determined, then **NOTIFY** CSIRT lead using appropriate notification system.
		Upon contacting CSIRT lead, **PROVIDE** information received from incident reporter.
		PROVIDE appropriate support to CSIRT lead for assessment, mitigation, and recovery from a cyber anomaly or attack.
		After taking immediate actions to protect facility or stabilize operations, **CONDUCT** additional notifications to organizations identified during evaluation of anomaly, describing substantive changes, additions, or modifications to initial notification.
		ENSURE CSIRT and plant management personnel are aware of issue and ongoing evaluation, and to solicit input and support in determining if condition requires a report to appropriate regulatory agency.
		Upon being contacted, Operations will **COORDINATE** altering of plant systems during analysis, containment, eradication, or recovery activities to recover and restore systems to design configuration using available contingency plans, maintenance orders, and backups as needed.

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